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MEDICAL RESEARCH COUNCIL
NATIONAL INSTITUTE FOR MEDICAL RESEARCH

THE RIDGEWAY · MILL HILL · LONDON, N.W.7.

Cables: NATINMED MILL, LONDON.

15 June 1956

Dear Dr Lederberg,

Thank you for your letter of June 8. I am sending off to you immediately spore suspensions of B.cereus 5 and 5B.

I am not quite sure if I completely understand your reference to the possibility of there being conditions attached to the acceptance of bacterial cultures. It has never occurred to me that this might be either reasonable or ethical - if, indeed, practicable. My only hope - and I am sure you will agree with me - is that if two groups of workers are studying the same problem with the same tools, they should keep each other as fully informed as possible about any interesting findings. Our own intention at the moment is to do some very limited fixation studies on a number of different B.cereus strains (in relation to their ability to produce penicillinase) and later on to search for some rational basis for the quantitative mutational changes in penicillinase formation rates that we have found in the B.cereus 5 family. We will keep you informed of any interesting points that crop up and I will send you a copy of any manuscript we prepare in typescript at the time we send it for publication. You may be interested to know straight away that although we originally believed that strain 5 was penicillinase-negative, we have since found that it produces minute amounts of the enzyme (immunologically indistinguishable from 5B penicillinase) amounting to an average of only a few molecules per cell. We do not, however, of course yet know whether these molecules are evenly distributed amongst the organisms within a population.

We also have isolated another mutant (5P) arising from strain 5 which produces penicillinase (again immunologically indistinguishable from that of 5B) at a rate approximately one-sixth that of 5B itself). We are referring to 5, 5P and 5B as minimo-, parvo-, and magno-penicillinase-constitutive strains respectively. None are inducible by penicillin. The differences between these three strains are thus only quantitative and I think this gives rise to some interesting speculations on the nature of mutations - as we study them in the laboratory; and on the evolution of enzymes in general. We shall be most interested to hear of any findings you make with these strains. I shall look forward to seeing you over here in this country next Spring if that can be arranged.

Yours sincerely,

Martin Pollock

M. R. Pollock,

Dr. J. Lederberg,
Madison, 6.